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PATENT  
Atty Docket: P71404US0

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:

Nis HALLAND et al.

Serial No.: 10/589,256

Filed: August 11, 2006

For: CATALYTIC ASYMMETRIC SYNTHESIS OF OPTICALLY ACTIVE  $\alpha$ -HALO-CARBONYL  
COMPOUNDS

Group Art Unit: Unassigned

Examiner: Unassigned

**INFORMATION DISCLOSURE STATEMENT  
UNDER 37 CFR 1.97**

**Mail Stop Amendment**  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

December 4, 2006

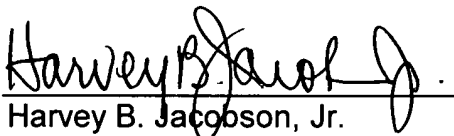
Sir:

As a means of complying with the duty of disclosure under 37 CFR §1.56, and in accordance with 37 CFR §§1.97 and 1.98, Applicant(s), through the undersigned attorney, submits this Information Disclosure Statement. The patents, publications or other information submitted herewith are listed on the attached Form PTO-1449 and copies are attached, excluding U.S. patents and U.S. patent application publications. The Examiner is requested to consider these references and make them of record in the file of this application.

Serial No.: 10/589,256  
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In accordance with 37 CFR §1.97(b)(3), this Information Disclosure Statement is being filed before the mailing date of a first Office Action on the merits of the above-identified application. Accordingly, it is respectfully submitted that no fee is required by the filing of this Information Disclosure Statement.

Respectfully submitted,  
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Form PTO-1449

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## U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.	Document Number	Publication Date	Name of Patentee or Applicant	Relevant Pages, Cols, Lines, Figs.
	AA				

## FOREIGN PATENT DOCUMENTS

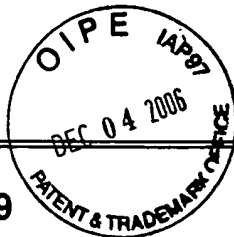
Examiner Initials*	Cite No.	Country Code + Number	Publication Date	Name of Patentee or Applicant	Relevant Pages, Cols, Lines, Figs.	Translation
	AB					

## NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.	Include name of author in CAPS; title of article; title of book, magazine, journal etc.; date; page(s); volume/issue number(s); publisher; city and/country where published.
	AC	Beesen, T., et al., "Enantioselective Organocatalytic $\alpha$ -Fluorination of Aldehydes", J. Am. Chem. Soc., Vol. 127, No. 24, 2005, pp. 8826-8828
	AD	Bertelsen, S., et al., "Organocatalytic Asymmetric $\alpha$ -Bromination of Aldehydes and Ketones", Chem. Comm., 2005, pp. 4821-4823
	AE	Brochu, M., et al., "Direct and Enantioselective Organocatalytic $\alpha$ -Chlorination of Aldehydes," J. Am. Chem. Soc., Vol. 126, No. 13, 2004, pp. 4108-4109
	AF	Lee, J., et al., "Efficient $\alpha$ -Halogenation of Carbonyl Compounds by <i>N</i> -Bromosuccinimide and <i>N</i> -Chlorosuccinimide," Korean Chem. Soc., Vol. 24, No. 4, April 20, 2003, pp. 407-408
	AG	Enders, D., et al., "Direct Organocatalytic $\alpha$ -Fluorination of Aldehydes and Ketones," Synlett, No. 6, 2005, pp. 991-993
	AH	Franzén, et al., "A General Organocatalyst for Direct $\alpha$ -Functionalization of Aldehydes: Stereoselective C-C, C-N C-F, C-Br, and C-S Bond-Forming Reactions. Scope of Mechanistic Insights", J. Am. Chem. Soc., Vol. 127, No. 51, 2005, pp. 18296-18304
	AI	Halland, N., et al., "Direct Organocatalytic Asymmetric $\alpha$ -Chlorination of Aldehydes", J. Am. Chem. Soc., Vol. 126, No. 15, 2004, pp. 4790-4791
	AJ	Halland, N., et al., "Mechanistic Investigation of the 2,5-Diphenylpyrrolidine-Catalyzed Enantioselective $\alpha$ -Chlorination of Aldehydes", J. Am. Chem. Soc., No. 11, 2005, pp. 7083-7090
	AK	Hinterman, L., et al., "Catalytic Enantioselective Chlorination and Bromination of $\beta$ -Keto Esters", Helvetica Chimica Acta, Vol. 83, 2000, pp. 2425-2435 (XP-002327583)
	AL	Hooz J., et al., "A Regiospecific Construction of $\alpha$ -Haloketones by the Reaction of Enol Borinates with <i>N</i> -Chlorosuccinimide. A Convenient Method for Converting Olefins into $\alpha$ -Haloketones and Esters", Canadian Journal of Chem. Vol. 50, 1972, pp. 2387-2388
	AM	Leutenegger, U., et al., "5-Aza-Semicorrins: A New Class of Bidentate Nitrogen Ligands for Enantioselective Catalysis", Tetrahedron, Vol. 48, No. 11, 1992, pp. 2143-2156 (XP-002087673)
	AN	Marigo, M., et al., "Highly Enantioselective Direct Organocatalytic $\alpha$ -Chlorination of Ketones", Angew. Chem. Int. Ed., No. 43, 2004, pp. 5507-5510
	AO	Marigo, M., et al., "Enantioselective Formation of Stereogenic Carbon-Fluorine Centers by a Simple Catalytic Method", Angew. Chem. Int. Ed. No. 44, 2005, pp. 3703-3706

Examiner Signature	Date Considered
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.



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Examiner Initials*	Cite No.	Include name of author in CAPS; title of article; title of book, magazine, journal etc.; date; page(s); volume/issue number(s); publisher; city and/country where published.
	BC	Marigo, M., et al., "Enantioselective Organocatalyzed $\alpha$ Sulfenylation of Aldehydes", Angew. Chem. Int. Ed. No. 44, 2005, pp. 794-797
	BD	Marigo, M., et al., "Asymmetric Organocatalytic Epoxidation of $\alpha,\beta$ -Unsaturated Aldehydes with Hydrogen Peroxide," J. Am. Chem. Soc., Vol. 127, No. 19, 2005, pp. 6964-6965
	BE	Ostendorf, M., et al., "(S)-Pyroglumatic Acid, (S)-Serine as Useful Starting Materials in the Synthesis of Enantiopure Hydroxyamidines", Eur. J. Org. Chem., 2000, pp. 115-124 (XP-002327582)
	BF	Steiner, D., et al., "Direct Asymmetric $\alpha$ -Fluorination of Aldehydes", Angew. Chem. Int. Ed. No. 44, 2005, pp. 3706-3710
	BG	
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	BI	
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